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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,911	07/09/2001	Toshihiko Aoki	109965	4494
25944	7590	04/06/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			SOHN, SEUNG C	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/899,911	<b>Applicant(s)</b> AOKI, TOSHIHIKO	
	<b>Examiner</b> Seung C. Sohn	<b>Art Unit</b> 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 6-27 is/are pending in the application.
- 4a) Of the above claim(s) 14-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. ***Claims 6-13 are rejected under 35 U.S.C. 112, second paragraph***, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 6, "an assembled state of said sensor head and said scale" is unclear. What is "an assembled state"? Clarification is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. ***Claims 6-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Sprague et al. (Patent No. US 4,409,479) insofar as understood.***

Referring to claim 6, Sprague et al. shows in Fig. 2 the following elements of Applicant's claim:

a) a scale (18, i.e., planar grid pattern) having scale markings (19, 20, i.e., grid lines and spaces) formed along a measurement axis (x or y axis) (Col. 3, lines 65-68);

b) a sensor head (10, i.e., optical cursor control device) movably arranged relative to said scale (18) along said measurement axis for reading said scale markings (Col. 3, lines 60-64); and

c) a state detection system (12 to 17) mounted on said sensor head (10) for optically detecting an assembled state (cursor control device and grid pattern are an assembled state when in use) of said sensor head (10) and said scale (18), wherein said state detection system contains a light spot position sensor (14 to 17) including a substrate; and a plurality of photosensitive devices (14, 16, i.e., transducers) arrayed at a certain pitch, formed with semiconductor layers deposited on said substrate, and isolated from each other (Col. 4, lines 3-7).

**Referring to claim 7**, Sprague et al. shows in Fig. 1 that said plurality of photosensitive devices configures a photosensitive device array arranged one-dimensionally (Col. 4, lines 8-16).

**Referring to claim 8**, Sprague et al. shows in Fig. 2 that said plurality of photosensitive devices includes a first photosensitive device array (14) arranged on said substrate along a first axis (y axis); and a second photosensitive device array (16) arranged on said first photosensitive device array with an interlayer insulator therebetween, along a second axis (x axis) different from said first axis (Col. 4, lines 33-43).

**Referring to claim 9**, Sprague et al. shows in Fig. 3 a scanning detector (22) for sequentially scanning output signals from said plurality of photosensitive devices to detect a light spot position (Col. 4, lines 52-63).

**Referring to claim 10**, Sprague et al. shows in Figs. 4 & 6 that an output signal line commonly connected to terminal electrodes of said plurality of photosensitive devices; and a detection circuit connected to said output signal line, wherein a light spot is radiated as a light pulse to determine a light spot position from a delay time of a detection output from said detection circuit after said light pulse irradiation (Col. 5, lines 8-22 and Col. 6, lines 16-27).

**Referring to claim 11**, Sprague et al. shows in Fig. 2 that said state detection system further includes a light source (12) arranged on said sensor head (10) for providing a light beam entering said light spot position sensor via said scale (18) (Col. 3, lines 59-64).

**Referring to claim 12**, Sprague et al. shows in Fig. 3 that said state detection system further includes a state detection means for detecting an original position of said sensor head to said scale based on a light spot position detected at said light spot position sensor (Col. 4, lines 52-63).

**Referring to claim 13**, Sprague et al. discloses that said light spot position sensor detects rotations in a parallel plane between said sensor head and said scale based on detection of interference fringes (Col. 7, lines 10-20).

***Response to Arguments***

5. Applicant's arguments filed January 23, 2004 have been fully considered but they are not persuasive.

In response to applicant's argument that Sprague et al. does not disclose, teach or suggest "a state detection system...for optically detecting an assembled state of said sensor and said scale", the examiner recognizes that the light source (12) and the transducers (14, 16) of Sprague et al. do optically detect an assembled state of a sensor head (10) and a scale (18, i.e., grid pattern). It is clear that optical cursor control device (10) of Sprague et al. works only when the device and grid pattern (18) are put together, i.e., assembled.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seung C. Sohn whose telephone number is (571) 272-2446. The examiner can normally be reached on Monday through Friday from 8:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**THANH X. LUU**  
**PATENT EXAMINER**